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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,834	02/19/2002	Wolfgang Scheibe	842FR/50684	2328

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CROWELL & MORING LLP
INTELLECTUAL PROPERTY GROUP
P.O. BOX 14300
WASHINGTON, DC 20044-4300

EXAMINER

BOECKMANN, JASON J

ART UNIT	PAPER NUMBER
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3752

MAIL DATE	DELIVERY MODE
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11/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/049,834

Applicant(s)

SCHEIBE ET AL.

Examiner

Jason J. Boeckmann

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/8/2008 has been entered.

Allowable Subject Matter

The indicated allowability of claims 16, 20, 33 and 37 is withdrawn in view of the newly discovered reference(s) to Kilgore et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are replete with errors too numerous to mention specifically. The following noted informalities are merely exemplary thereof.

Regarding claims 1 and 16, it is unclear what is meant by the term “activated especially electromagnetically,” of line 2. Is the injection valve activated electromagnetically or is it not? Secondly, it is unclear what is meant by the term “alternatively closes off or opens up,” of line 3. It is not entirely understood what alternatively closes or opens the passage; is it the control valve, or the valve actuator? It also appears that a word is missing between the words "actuator," and "alternatively." For example the words "that," or "which," could be used.

It is also unclear what is meant by the term “which is assigned to an actuator sealing surface,” of line 4. What is assigned to an actuator sealing surface, the control valve, or the valve actuator, or some other element?

Claims 1 and 16 recite the limitation "the passage opening" in line 5. There is insufficient antecedent basis for this limitation in the claims.

Claims 4 and 6 recite the limitation "the front face of the valve rod" in line 2. There is insufficient antecedent basis for this limitation in the claims. In claim 6, it is also not clear what is meant by the sealing surface being the front face of the valve body formed by the valve actuator. How can a valve actuator form a front face of a valve rod?

Claim 5 recites the limitation "the valve body" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Regarding claim 7, the term “essentially mushroom shaped” renders the claim indefinite. Is the valve actuator mushroom shaped or isn't it. If it is only partially mushroom shaped, then a partial mushroom does not necessarily have a stem or a

mushroom cap. Therefore, there is insufficient antecedent basis for the “stem” and the “mushroom cap” in the claim. The same goes for claim 9.

Claims 12 and 29 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. It appears that the length of a rod will always be a multiple of the diameter and therefore this limitation does not further limit claims 3 and 23.

Regarding claims 20 and 37, it is not clear if the at least one valve rod is the same valve rod from claims 1 and 21, or is it a different valve rod. Also, is there more than one valve rod? Additionally, it appears that there are some words missing from claim 20 that are present in claim 27.

It is also unclear what is meant by the term “in which the valve rod and the guide bushing that includes the actuator stop surface are placed, form a structural unit, which can be pre-adjusted in relation to the valve rod.” Does the valve rod or the guide bushing include the actuator stop? Where is the actuator stop surface placed, and what can be pre adjusted?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-37 are rejected, as best understood, under 35 U.S.C. 103(a) as being unpatentable over Baumgartner et al. (6,161,813), In view of Kilgore et al. (5,636,827).

Baumgartner et al. shows a valve comprising: an opening (the path below element 25) having a sealing surface (where element 25 touches the valve seat); a stop (the upper surface of element 54) displaced a distance from the opening; and an electromagnetic control valve including: a valve actuator (139, 127, 25) having an opening position (up) and a closing position (down), the valve actuator including: an actuator sealing surface (25) that engages the sealing surface of the opening when the valve actuator is at the closing position, an actuator stop surface (the bottom surface of element 139) that engages the stop when the valve actuator is at the closing position, and a valve rod (127) disposed between the actuator sealing surface and the actuator stop surface, but fails to specifically disclose that when the valve actuator is at the closing position, the valve rod is compressed to a length that is shorter by an excess length than a length of the valve rod when the valve actuator is at the opening position.

However, Kilgore et al. shows an electromagnetic control valve including a valve rod (34) having a sealing surface (the bottom of the rod). The valve rod of Kilgore et al. being elastically deformable in the direction along the length of the rod and therefore is inherently longer than required so as to elastically deform, or become shorter, when the valve is in the closed position (column 2, lines 55-65).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to make the valve rod (127) of Baumgartner et al.'s invention elastically deformable and slightly longer than the required length, just as the valve rod of the valve of Kilgore et al., so that the excess length is taken up by elastic deformation of the valve rod. This modification would allow for the kinetic energy of the valve rod to be transformed into strain energy and therefore dampen the closing force of the valve rod, as taught by Kilgore et al. (column 2, lines 55-65).

Regarding claims 2 and 22, the stop surface of the actuator is significantly larger than the sealing surface (see Fig. 3).

Regarding claims 3, 4, 23 and 24 the valve actuator is formed with a one-part valve rod and it contains a valve body which touches the front face of the valve rod and contains the sealing surface of the actuator (25).

Regarding claims 5 and 25, the valve body is constructed as a sphere, which interacts with the opening for the passage of fluid, forming a seal (See Fig. 3).

Regarding claims 6 and 26, the sealing surface of the actuator (25) is the front face of the valve rod formed by the actuator.

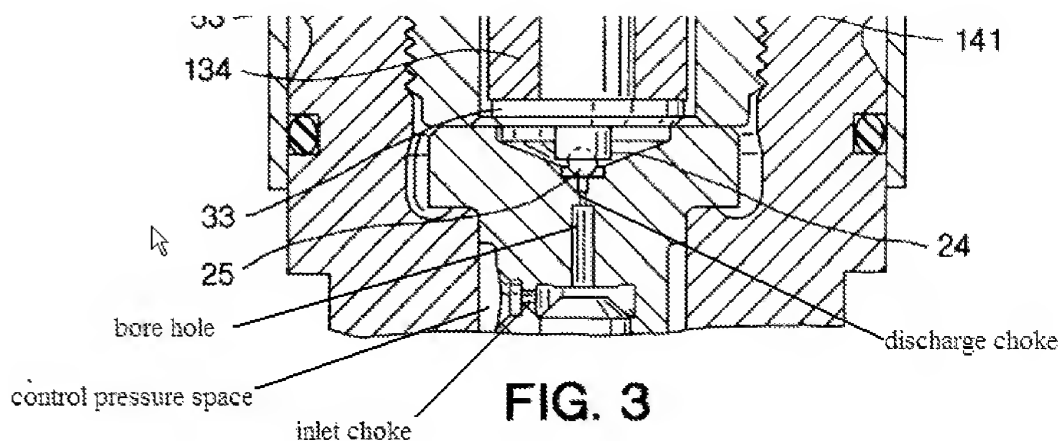
Regarding claims 7, 9, the valve actuator (139) is essentially mushroom-shaped, the stem of the mushroom forming the valve rod and the stop surface of the actuator being an annular collar, concentrically surrounding the valve rod in the region of the mushroom cap (24) (see Fig. 3).

Regarding claim 8, the valve actuator is divided in a dividing joint into an actuator stop (near 24), having the stop surface of the actuator, and a valve rod, which is in operative connection with the sealing surface and the stop of the actuator.

Regarding claims 10, 11, 27 and 28, the valve rod is guided axially movably in at least one guide bushing (134) and is disposed at a small distance from the sealing surface of the actuator (see Fig. 3).

Regarding claims 12, 13, 29 and 30 the length of the valve rod is a multiple of its diameter (see Fig. 3) and the sealing surface is formed in the end face of a disk-shaped insert part (the valve seat) (see Fig. 3) and adjoins the control pressure space on the side averted from the sealing surface.

Regarding claims 14-19, and 31-36 the insert part (also forms a stop for the valve needle) is formed in two parts with a first part, which contains an opening for the passage fluid and a discharge or outlet choke (see examiners marked up figure 3) and a second part at the control pressure space side, with a bore hole (see examiners marked up figure 3) which connects the control pressure space (see examiners marked up figure 3) with an opening for the passage of fluid. The second part contains an inlet choke (see examiners marked up figure 3) near the bore hole (see examiners marked up figure 3). The pressure space is connected with an inlet choke and the rear end of the valve needle (see examiners marked up figure 3) averted from the nozzle needle seat surface lies in the control pressure space. The pressure insert part also including an inlet choke and an outlet or discharge choke (see figure below).



Examiner's Marked Up Figure #3

Response to Arguments

Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason J. Boeckmann whose telephone number is (571)272-2708. The examiner can normally be reached on 8:00- 5:00, Monday through Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Len Tran can be reached on (571) 272-1184. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. J. B./

Examiner, Art Unit 3752

10/28/2008

/Len Tran/

Supervisory Patent Examiner, Art Unit 3852